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at least one compressor in fluid communication via a conduit between said source of air and at least one cylinder inlet port;
at least one air cooler interconnected between said compressor and said inlet port;
and
means for directing low pressure air to one of said inlet ports during an intake stroke of the piston and for directing air highly compressed by said compressor to the other of said inlet ports during a compression stroke of said piston, wherein one of said intake valves occupies an open position only while the other of said intake valves occupies a closed position.

9 34. (Thrice Amended) In an internal combustion engine having a crankshaft driven by at least one piston moving through at least a compression stroke and an intake stroke aided by combustion taking place within a cylinder, wherein the compression stroke results in the compressing of air within the cylinder, the improvement thereto comprising:

an external compression stage in which a second air charge is compressed outside the cylinder;

mk 72 a delivery conduit linking said external compression stage to the cylinder, with an intercooler through which said secondary air charge is selectively directed from said external compression stage;

two cylinder intake ports with an intake valve in each port; and

means for directing low pressure air to one of said intake ports during the intake stroke of the piston and for directing highly compressed air to the other of said intake ports during the compression stroke of the piston, wherein one of said intake valves occupies an open position only during a compression stroke of said piston.

Please add claims 35 and 49 to the present application as presented. Claims 35 and 49 have not been amended, but have been presented in independent form.

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11 ~~35~~. (Independent Form) In an internal combustion engine having a crankshaft driven by at least one piston moving through at least a compression stroke and an intake stroke aided by combustion taking place within a cylinder, wherein the compression stroke results in the compressing of air within the cylinder, the improvement thereto comprising:

an external compression stage in which a secondary air charge is compressed outside the cylinder;

delivery conduit linking said external compression stage to the cylinder, with an intercooler through which said secondary air charge is selectively directed from said external compression stage;

two cylinder intake ports with an intake valve in each port;

means for directing low pressure air to one of said intake ports during the intake stroke of the piston and for directing highly compressed air to the other of said intake ports during the compression stroke of the piston; and

a second external compressor in which said low pressure air charge is lightly compressed outside the cylinder and conduit directing said air charge from said second external compressor through an air cooler to a low pressure port of the cylinder during the intake stroke.

12 ~~38~~. (Thrice Amended) An internal combustion engine, comprising:

an engine block defining at least one cylinder therein, first and second inlet ports communicating between said cylinder and a source of air, and an exhaust port through which air is exhausted from said cylinder;

a piston movably mounted within said cylinder;

an intake valve selectively occluding each said intake port;

an exhaust valve selectively occluding said exhaust port;

means for directing air at a first pressure to said first inlet port and for directing air at a second pressure, different from said first pressure, to said second inlet port during a compression stroke of the piston, wherein one of said intake valves occupies an open position only while the other of said intake valves occupies a closed position.

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- 14 ~~49~~ (Independent Form) An internal combustion engine comprising:
- an engine block defining at least one cylinder therein, two cylinder inlet ports communicating between said cylinder and a source of air, and an exhaust port through which exhausted gases are expelled from said cylinder;
 - a piston movably mounted within said cylinder;
 - an intake valve selectively occluding each inlet port;
 - an exhaust valve selectively occluding said exhaust port;
 - at least one compressor in fluid communication via a conduit between said source of air and at least one cylinder inlet port;
 - at least one air cooler interconnected between said compressor and said inlet port;
 - means for directing low pressure air to one of said inlet ports during an intake stroke of the piston and for directing air highly compressed by said compressor to the other of said inlet ports during a compression stroke of said piston; and
 - a second external compressor in which said low pressure air charge is lightly compressed outside the cylinder and conduit directing said air charge from said second external compressor through an air cooler to a low pressure port of the cylinder during the intake stroke.

Please add the following new claims 54-64.

- 18 ~~84~~ (New) An internal combustion engine, comprising:
- an engine block defining at least one cylinder therein, two cylinder inlet ports communicating between said cylinder and a source of air, and an exhaust port through which exhausted gases are expelled from said cylinder;
 - a piston movably mounted within said cylinder;
 - a first intake valve cooperating with a first of said inlet ports and selectively movable between a closed position and an open position;

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a second intake valve cooperating with a second of said inlet ports and selectively movable between a closed position and an open position;
an exhaust valve cooperating with said exhaust port;
at least one compressor in fluid communication via a conduit between said source of air and at least said first of said inlet ports; and
wherein said first intake valve occupies its said open position only while said second intake valve occupies its closed position.

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55. (New) The internal combustion engine of claim 54, further comprising means for directing low pressure air to said second of said inlet ports during an intake stroke of the piston and for directing air highly compressed by said compressor to said first of said inlet ports during a compression stroke of said piston.

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56. (New) The internal combustion engine of claim 54, further comprising means for directing low pressure air to one of said inlet ports during an intake stroke of the piston and for directing air highly compressed by said compressor to the other of said inlet ports during a compression stroke of said piston and after compression has begun.

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57. (New) An internal combustion engine, comprising:
an engine block defining at least one cylinder therein, two cylinder inlet ports communicating between said cylinder and a source of air, and an exhaust port through which exhausted gases are expelled through said cylinder;
a piston movably mounted within said cylinder;
a first intake valve cooperating with a first of said inlet ports and selectively movable between a closed position and an open position;
a second intake valve cooperating with a second of said inlet ports and selectively movable between a closed position and an open position;
an exhaust valve cooperating with said exhaust port;
at least one compressor in fluid communication via a conduit between said source of air and at least said first of said inlet ports; and

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wherein said first intake valve occupies its said open position only during a compression stroke of said piston.

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58. (New) The internal combustion engine of claim 57, further comprising a means for directing low pressure air to said second of said inlet ports during an intake stroke of the piston and for directing air highly compressed by said compressor to said first of said inlet ports during a compression stroke of said piston.

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59. (New) The internal combustion engine of claim 57, further comprising a means for directing low pressure air to one of said inlet ports during an intake stroke of the piston and for directing air highly compressed by said compressor to the other of said inlet ports during a compression stroke of said piston and after compression has begun.

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60. (New) An internal combustion engine, comprising:
an engine block defining at least one cylinder therein, two cylinder inlet ports communicating between said cylinder and a source of air, and an exhaust port through which exhausted gases are expelled through said cylinder;
a piston movably mounted within said cylinder;
a first intake valve cooperating with a first of said inlet ports and selectively movable between a closed position and an open position;
a second intake valve cooperating with a second of said inlet ports and selectively movable between a closed position and an open position;
an exhaust valve cooperating with said exhaust port;
at least one compressor in fluid communication via a conduit between said source of air and at least said first of said inlet ports; and
wherein said first intake valve occupies its said open position only after compression has begun during a compression stroke of said piston.

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25 ~~61~~ (New) The internal combustion engine of claim ~~60~~²⁴, further comprising a means for directing low pressure air to said second of said inlet ports during an intake stroke of the piston and for directing air highly compressed by said compressor to said first of said inlet ports during a compression stroke of said piston.

26 ~~62~~ (New) The internal combustion engine of claim ~~60~~²⁴, further comprising a means for directing low pressure air to one of said inlet ports during an intake stroke of the piston and for directing air highly compressed by said compressor to the other of said inlet ports during a compression stroke of said piston and after compression has begun.

74 ~~63~~ (New) The internal combustion engine of claim ~~25~~¹, further comprising a means for directing low pressure air to one of said inlet ports during an intake stroke of the piston and for directing air highly compressed by said compressor to the other of said inlet ports during a compression stroke of said piston.

8 ~~64~~ (New) The internal combustion engine of claim ~~25~~¹, further comprising a means for directing low pressure air to one of said inlet ports during an intake stroke of the piston and for directing air highly compressed by said compressor to the other of said inlet ports during a compression stroke of said piston and after compression has begun.

REMARKS

1. This Amendment is in response to the outstanding Office Action dated October 12, 2000 and the teleconference with the Examiner on March 6, 2001. Applicant acknowledges with appreciation the aforementioned teleconference with Examiner and Examiner's helpful comments therein. During the teleconference, it was indicated that claim 38 was rejected under 35 U.S.C. §102(b) in view of Bricout and that claim 49, instead of claim 48, was objected to for being dependent upon a rejected claim. This Amendment is being filed within the six month statutory period for response. An extension request paying for the two (2) month extension of the shortened statutory period is included herewith.